Sveučilište u Zagrebu Agronomski fakultet
Svetošimunska cesta 25, 10000 Zagreb
Telefon: +385 (0)1 2393 777
E-mail: dekanat@agr.hr
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Aquatic ecosystems and biodiversity (146061)

Nositelj kolegija

prof. dr. sc. Marina Piria

Opis kolegija

Geologic and climatic changes. Changes of freshwater and marine habitats. Basic characteristics of different aquatic ecosystems. Habitats in marine and fresh waters and their influence on the biodiversity. The significance of biodiversity and its preservation. Reasons for endangering of biodiversity and ways of its protection. Speciation. Molecular biology evolution of aquatic organisms. Overview of all plant and animal phyla, with special emphasis on important marine and fresh water taxons. Fish biology and ecology. Sampling of aquatic organisms and their in situ study. Laboratory analysis of aquatic organisms. Use of the key for aquatic species determination. Section of fish. Student seminar.

ECTS: **3.00**

Sati nastave: 30
Predavanja: 22
Laboratorijske vježbe: 4
Seminar: 2
Terenske vježbe: 2

Izvođač predavanja

- prof. dr. sc. Ana Gavrilović
- prof. dr. sc. Marina Piria
- prof. dr. sc. Tea Tomljanović
- prof. dr. sc. Daniel Matulić

Izvođač vježbi

- dr. sc. Ivan Špelić
- dr. sc. Tena Radočaj

Izvođač seminara

- dr. sc. Ivan Špelić

Ocjenjivanje

Dovoljan (2): 60-69 %
Dobar (3): 70-79 %
Vrlo dobar (4): 80-89 %
Izvrstan (5): 90-100 %

Vrsta kolegija

- Graduate studies / Environment, agriculture and resource management (Obvezni kolegij, 3. semestar, 2. godina)

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Opće kompetencije

Students acquire knowledge on the biological and ecological diversity of marine and inland waters, on the ways of their endangerment and on the conservation measures.

Oblici nastave

- Lectures
- Laboratory practice/exercises
  Analyses of sampled material
- Field work
  Sampling of aquatic organisms and water
- Seminars
  Independent student group sampling, laboratory analysing, literature searching, writing and presenting specified case study

Ishodi učenja i način provjere

Ishod učenja	Način provjere
Basic general knowledge in field	Oral exam
Capability of knowledge implementation in practice	Exercises
Capability of analysis and synthesis	Oral exam
Research competencies	Exercises
Learning capabilities	Oral exam
Working capability in interdisciplinary teams	Seminar
Interpersonal competencies	Seminar
Oral and written communication in English	Seminar

Način rada

Obveze nastavnika

Regular maintenance of all forms of teaching. The time for consultations out of lectures.

Obveze studenta

Regular attending at classes and performing assigned tasks.

Polaganje ispita

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Elementi praćenja	Maksimalno bodova ili udio u ocjeni	Bodovna skala ocjena	Ocjena	Broj sati izravne nastave	Ukupni broj sati rada prosječnog studenta	ECTS bodovi
1st exam oral	16 %					0.5
2nd exam oral	16 %					0.5
3rd exam oral	16 %					0.5
4th exam oral	16 %					0.5
5th exam oral	16 %					0.5
Final exam Seminar written and oral	20 %					0.5
Total	100 %					3

Elementi praćenja	Opis	Rok	Nadoknada
Oral exams	In parts, according to the given paragraphs	Deadlines determined at the beginning of the semester	Deadlines determined at the beginning of the semester
Final oral exam	Public presentations of seminars with answering at questions	Deadlines determined at the beginning of the semester	Deadlines determined at the beginning of the semester

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Tjedni plan nastave

1. Habitat changes. Aquatic ecosystems L - Geologic and climatic changes; Changes of freshwater and marine habitats. Basic characteristics of different aquatic ecosystems.
2. Aquatic ecosystems L - Basic characteristics of different aquatic ecosystems.
3. Aquatic ecosystems. Habitat – biodiversity relationship. L - Basic characteristics of different aquatic ecosystems. Habitats in marine and fresh waters and their influence on the biodiversity; Reasons for endangering of biodiversity and ways of its protection; Speciation. Energy and productivity.
4. Molecular biology evolution. Molecular biology investigations L - Molecular biology evolution of aquatic organisms. Molecular biology investigation of aquatic organisms.
5. Aquatic plants and lower organisms L - Overview of important taxons of plants and lower organisms.
6. Freshwater invertebrates L - Overview of freshwater invertebrate animal phyla, with special emphasis on important freshwater taxons.
7. Freshwater invertebrates. Marine invertebrates. L - Overview of freshwater invertebrate animal phyla, with special emphasis on important freshwater taxons. Overview of marine ivertebrates, with special emphasis on important marine taxons.
8. Marine invertebrates L - Overview of marine ivertebrates, with special emphasis on important marine taxons.
9. Aquatic vertebrates L - Overview of aquatic vertebrates, with special emphasis on important marine and freshwater taxons.
10. Fish biology and ecology L - Basics of fish biology and ecology
11. Bases searching and communication Pe-L - Searching for scientific literature by internet and scientific bases. Presentation of seminars by internet.
12. Seminar S - Equipment and methods for sampling of water organisms.
13. Field Work F - Sampling of plankton, benthos and fish.
14. Laboratory Practice I Lab - Plankton and benthos analyses.
15. Laboratory Practice II Lab - Fish analyses.

Obvezna literatura

1. Sumich J. L. (1992): An Introduction to the Biology of Marine Life. WCB, Wm. C. Brown Publishers, Dubuque
2. Needham J. G., Paul R. (1988): A Guide to the Study of Fresh-Water Biology. McGraw-Hill, Boston
3. Moyle P. B., Cech J. J. (2004): Fishes: an introduction to ichthyology. Prentice Hall, Upper Saddle River
4. Sparre, P., Venema S. C. (1992): Introduction to tropical fish stock assessment. Part 1-Manual. FAO, Fish Tech. Pap., 306/1, 110 pp

Preporučena literatura

1. Riedl R. (1963): Fauna und Flora der Adria. Verlag Paul Parey, Hamburg und Berlin
2. Kottelat, M, Freyhof J. (2007): Handbook of European Freshwater Fishes. Kottelat, Cornol, Switzerland and Freyhof, Berlin, Germany
3. Stiassny M. L. J., Parenti L. R., Johnson G. D. (eds), (1996): Interrilationships of Fishes. Academic Press, San Diego

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Sličan kolegij na srodnim sveučilištima

- Applied Hydrobiology, Mendel University in Brno, Czech Republic
- Biologija mora. Sveučilište u Dubrovniku
- Ecology and Biodiversity, Marine and Freshwater Biology, Monash University, Melbourne, Australia

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